

WHAT IS CLAIMED IS:

1. A method for providing an interactive data service between a base station and at least one mobile station in a mobile communication system including the
5 at least one mobile station, the base station communicating with the at least one mobile station, and a server connected to the base station, the server providing data to the at least one mobile station, the method comprising the steps of:
transmitting, by the base station, data transmitted from the server, to the at least one mobile station over a forward common channel all mobile stations can receive in
10 common; and
transmitting reverse transmission data over a dedicated channel for data transmission, by a serviced mobile station, receiving a service through the forward common channel.
- 15 2. The method of claim 1, wherein the base station provides a broadcast service through the forward common channel.
3. The method of claim 1, wherein the base station transmits to the at least one mobile station assignment information of a multicast fundamental channel for
20 transmitting forward broadcast information, assignment information of a common assignment channel for transmitting a response message for reverse data, assignment information of a common power control channel for transmitting power control information of a reverse dedicated channel, and assignment information for identifying the serviced mobile station and assigning a reverse power control channel.
- 25 4. The method of claim 3, wherein the base station transmits reverse power control information to the at least one mobile station over a common power control channel.
- 30 5. The method of claim 3, wherein the serviced mobile station transmits a power control bit to the base station over the reverse dedicated channel as power

control information for one of the common power control channel, a forward dedicated control channel, and the common assignment channel.

6. The method of claim 1, further comprising the step of transmitting,
5 from the base station to the at least one mobile station, reverse power control information via a common power control channel and forward data via a forward dedicated control channel.

7. The method of claim 1, further comprising the step of transmitting,
10 from the base station to the at least one mobile station reverse power control information via a common power channel and a control message to be delivered to a particular mobile station or a response message for reverse data a time-sharing common assignment channel or dedicated control channel.

15 8. The method of claim 1, further comprising the step of setting up, from the mobile station to the base station, a reverse fundamental channel, a dedicated control channel, and a supplemental channel.

9. A method for providing an interactive data service between a base
20 station and at least one mobile station in a mobile communication system including a plurality of mobile stations, the base station communicating with the plurality of mobile stations, and a server connected to the base station, the server providing data to the plurality of mobile stations, the method comprising the steps of:

upon receiving a service request from at least one of the plurality of mobile
25 stations, setting up, by the base station, a connection to the at least one of the plurality of mobile stations and opening a session for the requested service between the base station and the server;

transmitting, by the base station, service data transmitted from the server, to the
at least one of the plurality of mobile stations over a forward dedicated channel;

30 comparing, by the server, a number of the at least one of the plurality of mobile stations requesting the service with a predetermined threshold; and

if the number of the at least one of the plurality of mobile stations requesting the service is larger than the predetermined threshold, simultaneously transmitting, by the base station, service data to be provided from the server to the at least one of the plurality of mobile stations, to at least one of the at least of the plurality of mobile
5 stations over a common channel, and transmitting reverse transmission data over respective dedicated channels by the at least one of the plurality mobile stations receiving the service through the common channel.

10. The method of claim 9, wherein the base station provides a broadcast
10 service through the common channel.

11. The method of claim 9, wherein the base station transmits information for changing a forward data transmission channel from a dedicated channel to a common channel and a handoff direction message, to the at least one of the plurality of
15 mobile stations.

12. The method of claim 11, wherein the handoff direction message includes multicast fundamental channel assignment information, common assignment channel assignment information for transmitting a response message for reverse data,
20 common power control channel assignment information for transmitting power control information of a reverse dedicated channel, and information for identifying the mobile station requesting the service and assigning a reverse power control channel.

13. The method of claim 11, wherein the base station transmits reverse
25 power control information to the at least one of the plurality of mobile stations over a common power control channel.

14. The method of claim 12, wherein the mobile station requesting the service transmits a power control bit to the base station over a reverse dedicated channel
30 as power control information for one of a common power control channel, a forward dedicated control channel, and a common assignment channel.

15. The method of claim 9, wherein the base station transmits to the at least one of the plurality of mobile stations a release command message for changing a data transmission channel from the base station to the mobile station, from a dedicated channel to a common channel.

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16. A method for releasing an interactive data service between a base station and a mobile station in a mobile communication system including a plurality of mobile stations, the base station communicating with the plurality of mobile stations, and a server connected to the base station, comprising the steps of:

10 transmitting, by the base station, service data to be transmitted from the server to the plurality of mobile stations, to at least one of the plurality of mobile stations over a common channel, and transmitting reverse transmission data over respective dedicated channels by at least one of the plurality of mobile stations receiving a service through the common channel;

15 comparing, by the server, a number of the at least one of the plurality of mobile stations receiving the service with a predetermined threshold, while providing the service data;

if the number of the at least one of the plurality of mobile stations receiving the service data provided over the common channel is smaller than the threshold,
20 transmitting by the base station service data provided from the server to at least one of the at least one of the plurality of mobile stations requesting the service over a dedicated channel; and

releasing by the base station a session opened for a service between the base station and the server, if all of the at least one of the plurality of mobile stations
25 receiving the service finish the service reception.

17. The method of claim 16, wherein the base station provides a broadcast service through the common channel.

30 18. A method for providing an interactive data service between a base station and a plurality of mobile stations in a mobile communication system including

the plurality of mobile stations, the base station communicating with the plurality of mobile stations, and a server connected to the base station, comprising the steps of:

upon receiving a service request from a first mobile station, setting up, by the base station, a connection to the first mobile station, and shifting a state with the first
5 mobile station to a traffic state;

opening, by the base station, a session for the requested service between the base station and the server, registering the first mobile station in the requested service, and shifting the state with the first mobile station to a dormant state;

upon receiving a service request from a second mobile station in the dormant
10 state, paging, by the server, the first mobile station via the base station;

assigning, by the base station, a forward common channel and a reverse dedicated channel between the base station and the first mobile station; and

transmitting, by the base station, service data transmitted from the server, to the first mobile station over the assigned forward common channel, and transmitting by the
15 first mobile station service data to be transmitted in a reverse direction over the assigned dedicated channel.

19. A method for providing an interactive data service between a base station and a plurality of mobile stations in a mobile communication system including
20 the plurality of mobile stations, the base station communicating with the plurality of mobile stations, and a server connected to the base station, comprising the steps of:

upon receiving a service request from a first mobile station registered in the base station, setting up, by the base station, a connection to the first mobile station and shifting a state with the first mobile station to a traffic state;

25 opening, by the base station, a session for the requested service between the base station and the server, registering the first mobile station in the requested service, and shifting the state with the first mobile station to a dormant state;

upon receiving a service request from a second mobile station in the dormant state, paging, by the server, the first mobile station through the base station, and
30 transitioning to the traffic state to provide a service between the base station and the first mobile station;

comparing, by the server, a number of the plurality of mobile stations requesting the service with a predetermined threshold, in the traffic state;

if the number of the plurality of mobile stations requesting the service is larger than the threshold, assigning by the base station a forward common channel and a
 5 reverse dedicated channel between the base station and the first mobile station and transitioning to a semi-traffic state; and

transmitting, by the base station, service data transmitted from the server, to the first mobile station over the assigned forward common channel, and transmitting, by the first mobile station, service data to be transmitted in a reverse direction over the
 10 assigned dedicated channel.

20. A method for providing an interactive data service between a base station and a mobile station in a mobile communication system including the mobile station, the base station communicating with the mobile station, and a server connected
 15 to the base station, comprising the steps of:

setting up, by the base station, a connection to the mobile station and shifting a state with the mobile station to a traffic state, if a data transmission request to the server is received from the mobile station receiving service data provided from the server, from the base station over a common channel;

20 opening, by the base station, a session for the requested data transmission between the base station and the server;

assigning, by the base station, a reverse dedicated channel between the base station and the mobile station; and

transmitting, by the mobile station, service data to be transmitted in a reverse
 25 direction, over the assigned dedicated channel.

21. The method of claim 20, wherein the base station provides a broadcast service through the common channel.

30 22. A method for providing an interactive data service between a base station and a mobile station in a mobile communication system including the mobile

station, the base station communicating with the mobile station, and a server connected to the base station, comprising the steps of:

receiving, by the mobile station, radio resource information for the interactive data service from the base station;

5 sending, by the mobile station, an interactive data service request to the base station using the received information;

setting up, by the base station, a connection to the mobile station, and shifting a state with the mobile station to a traffic state;

opening, by the base station, a session for the requested service between the
10 base station and the server;

assigning, by the base station, a forward common channel and a reverse dedicated channel between the base station and the mobile station;

transmitting, by the base station, service data to be provided from the server to the mobile station, to the mobile station over the assigned common channel; and

15 transmitting, by the mobile station, service data to be provided from the mobile station to the server, to the base station over the assigned dedicated channel.

23. The method of claim 22, wherein the base station provides a broadcast service through the common channel.

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24. The method of claim 22, wherein the radio resource information comprises logical-to-physical mapping (LPM) information, multiplexing rule information, and multicast service reference identifier (MSR_ID) information according to multicast fundamental channels (M-FCH).

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25. A method for providing an interactive data service between a base station and a mobile station in a mobile communication system including the mobile station, the base station communicating with the mobile station, and a server connected to the base station, comprising the steps of:

30 upon receiving a service request from the mobile station, setting up, by the base station, a connection to the mobile station, and shifting a state with the mobile station to a traffic state;

opening, by the base station, a session for the requested service between the base station and the server in the traffic state, registering the mobile station in the requested service, and shifting the state with the mobile station to a dormant state;

5 assigning, by the base station, a forward dedicated channel and a reverse dedicated channel between the base station and the mobile station and transitioning to the traffic state, if the mobile station has transmission data in the dormant state;

transmitting, by the base station, service data to be provided from the server to the mobile station in the traffic state, to the mobile station over a previously assigned forward common channel; and

10 transmitting and receiving, by the base station and the mobile station, data over the assigned forward dedicated channel and the assigned reverse dedicated channel, while the mobile station receives service data over the forward common channel.

26. The method of claim 25, wherein the base station provides a broadcast
15 service through the common channel.

27. The method of claim 25, wherein data received by the mobile station from the base station over the assigned forward dedicated channel comprises information for controlling the reverse dedicated channel.

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